

VU Research Portal

The role of MRI in pharmacovigilance of natalizumab-treated MS patients: a “known unknown”?

Wattjes, M.P.

2019

document version

Publisher's PDF, also known as Version of record

[Link to publication in VU Research Portal](#)

citation for published version (APA)

Wattjes, M. P. (2019). *The role of MRI in pharmacovigilance of natalizumab-treated MS patients: a “known unknown”?* [PhD-Thesis - Research and graduation internal, Vrije Universiteit Amsterdam].

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal ?

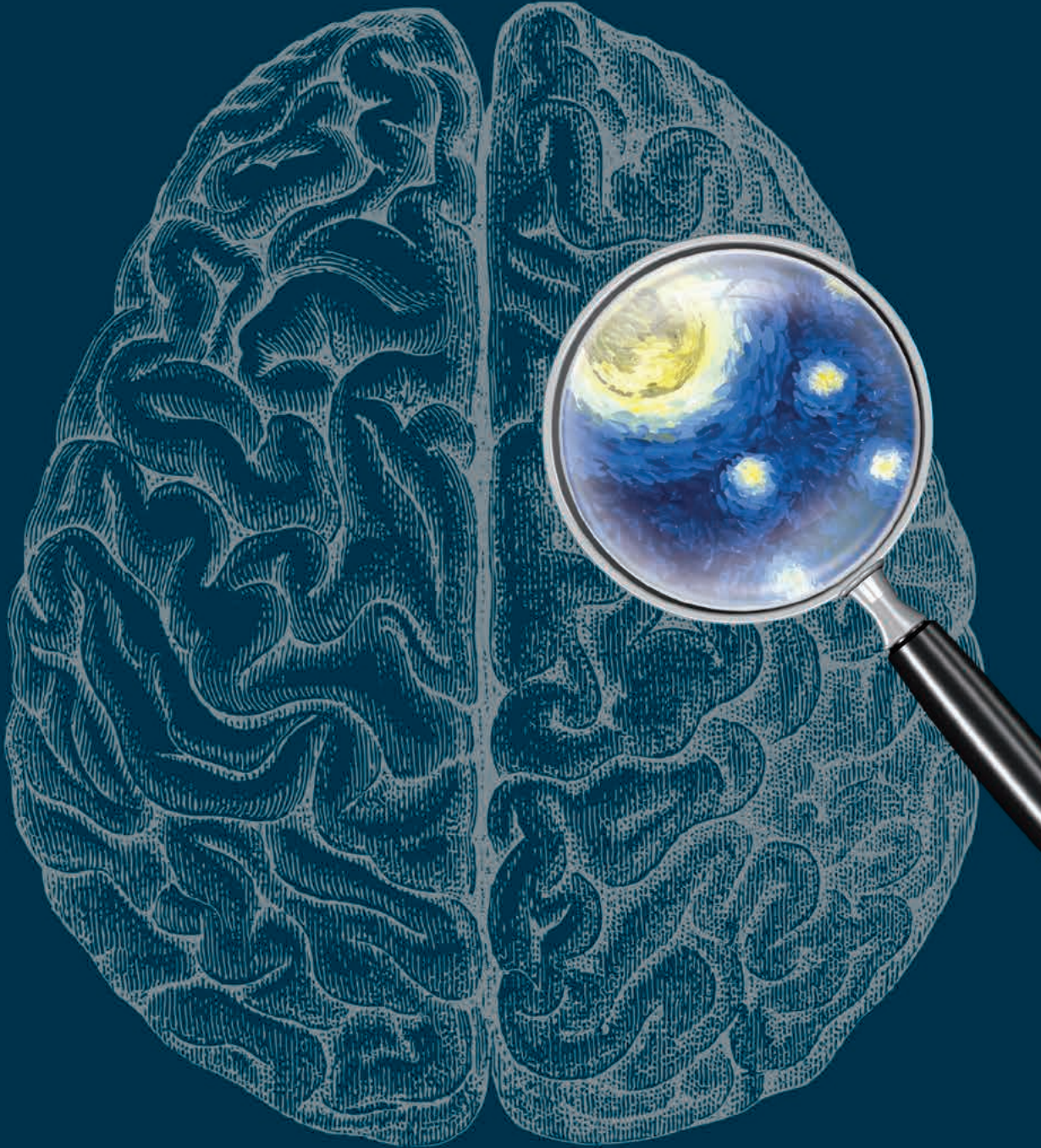
Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

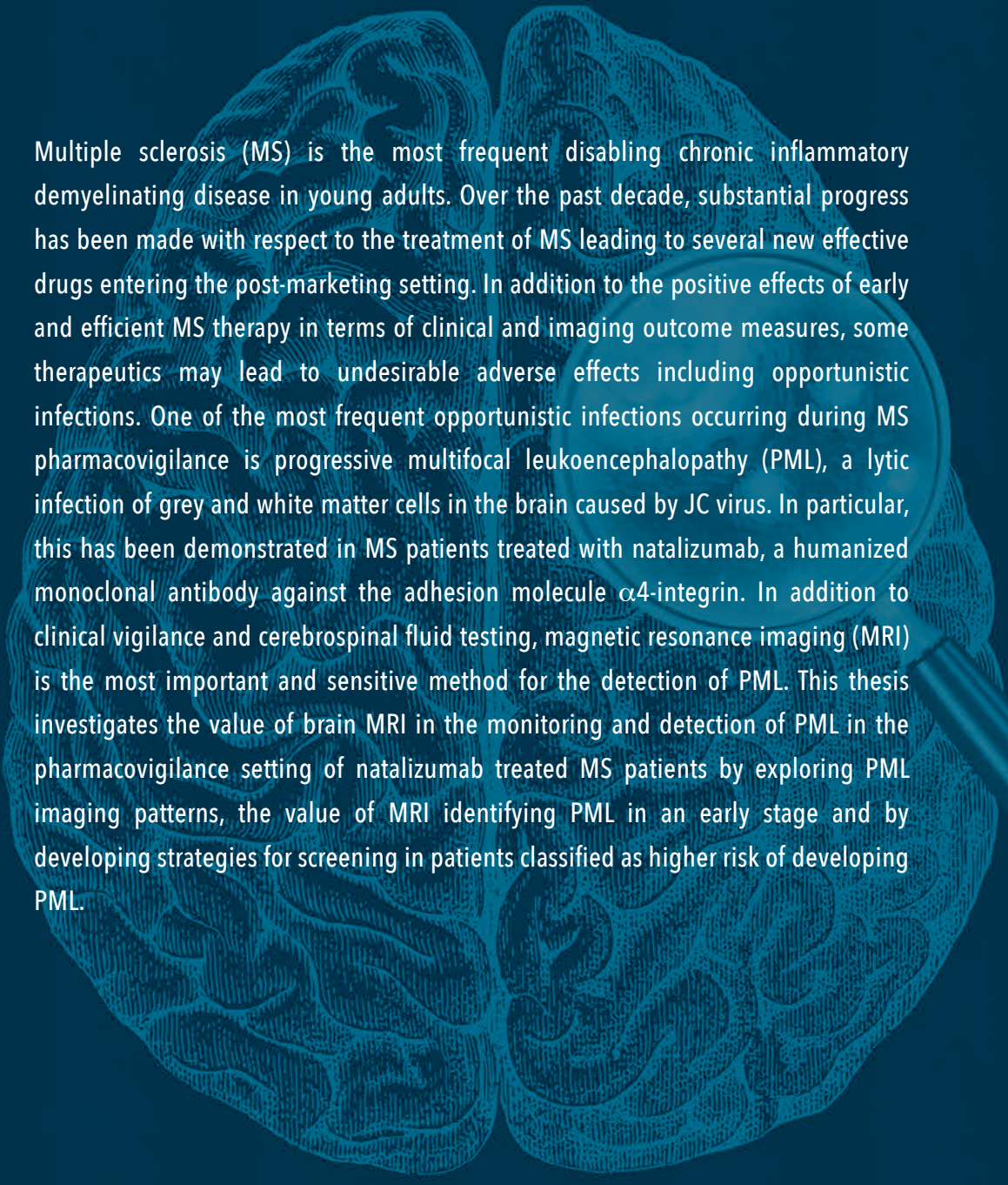
E-mail address:

vuresearchportal.ub@vu.nl

**The role of MRI in
pharmacovigilance of natalizumab-treated MS patients:
a “known unknown”?**



Mike P Wattjes



Multiple sclerosis (MS) is the most frequent disabling chronic inflammatory demyelinating disease in young adults. Over the past decade, substantial progress has been made with respect to the treatment of MS leading to several new effective drugs entering the post-marketing setting. In addition to the positive effects of early and efficient MS therapy in terms of clinical and imaging outcome measures, some therapeutics may lead to undesirable adverse effects including opportunistic infections. One of the most frequent opportunistic infections occurring during MS pharmacovigilance is progressive multifocal leukoencephalopathy (PML), a lytic infection of grey and white matter cells in the brain caused by JC virus. In particular, this has been demonstrated in MS patients treated with natalizumab, a humanized monoclonal antibody against the adhesion molecule α 4-integrin. In addition to clinical vigilance and cerebrospinal fluid testing, magnetic resonance imaging (MRI) is the most important and sensitive method for the detection of PML. This thesis investigates the value of brain MRI in the monitoring and detection of PML in the pharmacovigilance setting of natalizumab treated MS patients by exploring PML imaging patterns, the value of MRI identifying PML in an early stage and by developing strategies for screening in patients classified as higher risk of developing PML.